

Amendment to the Claims

1. (Currently Amended) A tablet storage and take-out apparatus comprising:

a cylindrical drum having a vertical axis and being ~~which has an axis thereof in a vertical direction and which is so supported~~ so as to be rotatable about the axis;

drum driving means for rotatably driving the drum ~~into rotation~~;

a plurality of tablet cassette mounting bases ~~which are fitted to an outer surface of the drum~~;

a plurality of tablet cassette cassettes for storing ~~which stores tablets, the tablet cassettes being and which is~~ detachably mounted on the tablet cassette mounting ~~base~~ bases, respectively;

a plurality of guide passages ~~a guide passage for guiding~~ which guides inside the drum tablets discharged from the tablet ~~cassette cassettes, respectively~~;

a transfer robot disposed ~~which is provided~~ inside the drum so as to be liftable along and also rotatable about the axis of the drum, the transfer robot having ~~which has~~ a pair of arms for holding a vial, and being operable to transfer ~~which transfers~~ the vial held by the arms between a delivery position located outside an opening formed in an ~~upper end or a lower end~~ of the drum and a tablet filling position inside the drum where the tablets discharged through a specified one of the guide passages are to be supplied to the vial ~~the guide passage are filled~~; and

control means for controlling a position of at least one of the drum and the transfer robot so that an opening of the vial held by the transfer robot agrees with an outlet of the specified guide passage.

2. (Currently Amended) The tablet storage and take-out apparatus according to claim 1,
wherein ~~each of the guide passages~~~~the guide passage~~ has a storage part which stores
tablets discharged from the tablet cassette and which has in a bottom thereof an outlet and a
shutter for opening and closing the outlet.

3. (Currently Amended) The tablet storage and take-out apparatus according to claim 2,
wherein the shutter has detection means for detecting open and ~~close~~closed states of the
outlet of the storage part, and

wherein the control means is operable to stop~~stops~~ the transfer robot when the detection
means detects the open state of the outlet of the storage part.

4. (Currently Amended) The tablet storage and take-out apparatus according to claim 2,
wherein a guide member is disposed ~~wherein, below the shutter, a guide member is~~ so as
to guide~~provided which guides~~ the tablets discharged from the storage part to the opening of the
vial held by the transfer robot.

5. (Original) The tablet storage and take-out apparatus according to claim 4, wherein the guide
member is fitted to the arms of the transfer robot.

6. (Currently Amended) The tablet storage and take-out apparatus according to claim 5,
wherein the shutter is biased in~~forced in such~~ a direction to close ~~as to constantly close~~ the outlet

of the storage part, and

wherein the shutter has a contact part which can be contacted by the guide member to thereby open the storage part upon movement of the transfer robot~~when the transfer robot moves~~.

7. (Currently Amended) The tablet storage and take-out apparatus according to claim 1, wherein the transfer robot comprises:

a frame ~~having which~~ has a lifting guide extending along the axis of the drum, the lifting guide having and whose upper and lower ends that are ~~so~~-supported so as to be rotatable about the axis of the drum;

a base ~~which is~~ liftably fitted to the lifting guide, ~~and which has~~ the arms of the transfer robot being supported on the base;

rotation driving means for rotatably driving the frame ~~into rotation~~ about the axis of the drum;

lifting driving means for lifting the base; and

arm driving means for driving the arms.

8. (Currently Amended) The tablet storage and take-out apparatus according to claim 7,

wherein the transfer robot further ~~has a~~ comprises a boom which is fitted to the base so as to be movable back and forth in a horizontal direction; and horizontal driving means for moving the base back and forth in the horizontal direction, and

wherein the arms or the transfer robot are fitted to a leading end of the boom.

9. (Currently Amended) The tablet storage and take-out apparatus according to claim 8,
wherein the arms of the transfer robot ~~are so provided as to be~~ are swingable between a
horizontal position where the opening of the vial held by the arms faces straight upward and a tilt
position where the opening faces obliquely upward while being tilted at 45 degrees, and
wherein the boom has swinging means for swinging the arms of the transfer robot.

10. (Currently Amended) The tablet storage and take-out apparatus according to claim 1,
wherein the arms are provided with ~~two~~ first and second rollers for engaging sides ~~and~~
~~two or one rollers on one side and another side of the vial, respectively, each roller having a shaft~~
extending in a height direction of the vial held so as to support a side surface of the vial at two
~~four or three~~ points.

11. (Currently Amended) The tablet storage and take-out apparatus according to claim 1,
wherein each of the first and second arms are provided with two rollers ~~and two or one rollers on~~
~~one side and another side, respectively, of each of an upper and a lower portions of the held vial,~~
each of the rollers ~~roller~~ having a shaft extending in a height direction of the vial so as to support
a side surface of the vial at a plurality of eight or six points.

12. (Original) The tablet storage and take-out apparatus according to claim 1, wherein the drum
driving means comprises:

a motor;
a transmission mechanism for transmitting a driving force of the motor to the drum; and
moving means for moving the transmission mechanism between a transmission position where the driving force is transmitted from the motor to the drum and a blocking position where the driving force from the motor to the drum is blocked.

13. (Currently Amended) The tablet storage and take-out apparatus according to claim 12, wherein the transmission mechanism further ~~has~~has, between the motor and the ~~drum~~drum, an intermediate transfer mechanism, which is moved by the moving means between the transmission position and the blocking position.

14. (Currently Amended) The tablet storage and take-out apparatus according to claim 12, wherein the moving means includes a lever which can be manually operated from outside of the drum.

15. (Currently Amended) The tablet storage and take-out apparatus according to claim 12, further comprising~~wherein there are provided~~ origin detection means for detecting an origin of the drum in a rotation direction thereof, wherein~~and origin search means for searching~~ an origin of the drum can be determined by rotating the drum by the drum driving means until the origin detection means detects the origin of the drum.

16. (Currently Amended) The tablet storage and take-out apparatus according to claim 15, wherein the origin detection means comprises a first sensor and a second sensor which are adjacent each other, and ~~which, when the first sensor being operable to detect first detects an origin, a position thereof is a left rotation limit of the drum, and when the second sensor being operable to detect first detects an origin, a position thereof is a right rotation limit of the drum.~~

17. (Currently Amended) The tablet storage and take-out apparatus according to claim 16, wherein the origin detection ~~means~~sensor has further comprises a third sensor disposed between the first sensor and the second sensor, and

wherein the drum driving means is operable to stop~~stops~~ the drum in response to a detection by~~when either the first sensor or the second sensor detects an origin and then a~~ detection by the third sensor~~detects an origin~~.

18. (Currently Amended) The tablet storage and take-out apparatus according to claim 15, further comprising

~~wherein~~ drum rotation position detection means for detecting a rotation position of the drum relative to ~~from the origin is provided~~, and

wherein, when the origin of the drum is detected by the origin detection means, the rotation position detected by the drum rotation position detection means is reset.

19. (Currently Amended) The tablet storage and take-out apparatus according to claim 1,

wherein the ~~drum comprises~~ drum comprises at least two body members each having a circular-arc cross section; and rotary support rings fitted to an upper end and a lower end of the body members, and

wherein at least one of the body members has the upper end and the lower end thereof rotatably fitted to the rotary support rings so as to be capable of opening and closing the inside of the drum and also has a holding member for holding a closed state of the drum.

20. (Currently Amended) A tablet storage and take-out apparatus ~~characterized by~~ comprising:

a tablet supply unit including~~part comprising~~: a cylindrical drum which has ~~an axis thereof in a vertical axis direction and which~~ and is so-supported so as to be rotatable about the axis;

drum driving means for rotatably driving the drum ~~into rotation~~;

a plurality of tablet cassette mounting bases ~~which are~~ fitted to an outer surface of the drum;

a plurality of tablet cassettes ~~cassette which is~~ detachably mounted on the tablet cassette mounting ~~base~~ bases, respectively;

~~and a plurality of guide passage passages for guiding which guides inside the drum tablets upon discharge discharged from the tablet cassette cassettes, respectively~~ and supplying tablets in accordance with prescription data;

a vial supply unit for storing~~part which~~ stores a large number of vials by size, the vial

supply unit being operable to supply and which supplies, one by one, ~~the~~ vials of a size suitable to be filled with tablets in accordance with the prescription data;

a cap supply unit for storing~~part which stores~~ caps for plugging the vials and ~~which supplies supplying~~ the caps one by one;

a capping unit~~part which plugs~~ for applying one of the caps, the cap supplied from the cap supply ~~part in~~ unit, to the vial supplied~~filled~~ with the tablets;

a storage ~~part which stores~~ unit for storing the capped and filled vial~~vial filled with the tablets and plugged with the cap~~ so that the vial can be taken out of the storage unit by an operator;

a first transfer robot for holding and transferring ~~a which holds and transfers~~ the vial taken out from the vial storage ~~take-out part~~ unit;

a second transfer robot disposed~~which has a pair of arms for holding the vial, which is provided~~ inside the drum, the second transfer robot having a pair of arms and being so as to be liftable along and rotatable about the axis of the drum, the second transfer robot being operable to hold and transfer~~and which holds and transfers~~ the vial from the first transfer robot to a selected one of the plurality of guide passages;

a third transfer robot for transferring~~which delivers~~ an empty vial ~~transferred~~ from the first transfer robot to the second transfer robot, the third transfer robot being operable to deliver ~~and also which delivers~~ the vial filed with the tablets and transferred by the second transfer robot to the capping unit~~vial closing part~~; and

a fourth transfer robot for transferring ~~which transfers~~ the vial from~~transferred by~~ the third

transfer robot to the storage unit~~part~~.

21. (Currently Amended) The tablet storage and take-out apparatus according to claim 20, wherein, when the tablet cassettes do not have~~supply apparatus has no~~ tablets corresponding to the prescription data, the first transfer robot delivers the vial to the third transfer robot without delivering the vial to the second transfer robot~~robot~~ and the third transfer robot subsequently delivers the vial to the fourth transfer robot without delivering the vial to the capping unit~~part~~.

22. (Currently Amended) The tablet storage and take-out apparatus according to claim 20, further comprising a photographing part~~unit for taking~~ which photographs from above the vial supplied~~filled~~ with the tablets for the purpose of inspecting~~for audit of~~ the vial,

wherein the third vial transfer arm is operable to transfer~~transfers~~ the vial supplied~~filled~~ with the tablets and transferred by the second vial transfer arm~~robot~~ to the tablet photographing unit~~part~~ and then to deliver~~delivers~~ the vial to the vial capping unit~~closing part~~.

23. (Currently Amended) The tablet storage and take-out apparatus according to claim 20, further comprising a labeling unit~~for placing~~~~part which puts~~ a label with prescription information printed thereon on the vial supplied from the vial supply unit~~part~~,

wherein the first transfer robot is operable to transfer~~transfers~~ the vial to the labeling unit~~part~~ and delivers~~deliver~~ the vial provided with the label to the second transfer robot.

24. (Currently Amended) A tablet storage and take-out ~~apparatus, characterized by apparatus~~ comprising:

a first cylindrical first drum having a vertical~~which has an axis thereof in a vertical direction, which is so~~ and being supported as to be rotatable about the axis, the first cylindrical drum having and ~~which has a first opening in a part thereof;~~

first drum driving means for rotatably driving the first cylindrical drum ~~into rotation;~~

a second cylindrical second drum which is arranged radially outwardly~~to an outer side of the first cylindrical drum, the second cylindrical drum being which is coaxial with respect to the first cylindrical the axis of the first drum, and being which is so~~ supported so as to be rotatable about the axis, wherein the second cylindrical drum has and ~~which has a second opening in a part thereof;~~

second drum driving means for rotatably driving the second drum ~~into rotation;~~

a plurality of tablet cassette mounting bases ~~which are fitted to an outer surface of each of the first and second cylindrical drums;~~

a plurality of tablet cassettes which are detachably mounted on the tablet cassette mounting bases, respectively; ~~of the first and second drums;~~

a plurality of guide passages provided on the first cylindrical drum for guiding tablets, discharged from the tablet cassettes mounted on the tablet cassette mounting bases that are fitted to the first cylindrical drum, interiorly of the first cylindrical drum;

a plurality of guide passages ~~passage~~ provided on the second cylindrical drum for guiding

tablets, which guides inside the first and second drums tablets discharged from the tablet cassettes,
mounted on the tablet cassette mounting bases that are fitted to the second cylindrical drum,
interiorly of the second cylindrical drum;

a transfer robot ~~which is provided~~ disposed inside of the first cylindrical drum so as to
be liftable along the axis and also rotatable about the axis, the transfer robot having~~which has~~ a
pair of arms for holding a vial, and ~~which transfers~~ transferring the vial held by the pair of arms
between a delivery position, located outside an opening in an upper end or a lower end of the first
and seconds drums and a tablet supply~~filling~~ position where the tablets discharged through the
guide passages of the first cylindrical drum and the second cylindrical drum are supplied to the
vial~~filled~~; and

control means for controlling a position of at least one of the first cylindrical drum, the
second cylindrical drum, and the transfer robot so that an opening of the vial held by the transfer
robot is aligned~~agrees~~ with an outlet of a selected one of the guide~~passage~~ passages.

25. (Currently Amended) The tablet storage and take-out apparatus according to claim 24,
wherein the at least one opening of the first cylindrical drum includes a plurality of openings~~is~~
provided at a plurality of positions in a circumferential direction of the first cylindrical drum.

26. (Currently Amended) A tablet storage and take-out apparatus comprising:

a first cylindrical first drum ~~which has an~~ having a vertical axis thereof in a vertical
~~direction, which is so~~ and being rotatably supported as to be rotatable about the axis, the first

cylindrical drum defining and which has a first opening in a part thereof;

first drum driving means for rotatably driving the first cylindrical drum into rotation;

a second cylindrical second drum which is arranged drum disposed radially outward relative to an outer side of the first cylindrical drum, the second cylindrical drum being which is coaxial with the axis of the first cylindrical drum, and which is so supported so as to be rotatable about the axis, wherein the second cylindrical drum includes and which has a second opening in a part thereof;

second drum driving means for rotatably driving the second drum into rotation;

a plurality of tablet cassette mounting bases ~~which are~~ fitted to an outer surface of each of the first and second cylindrical drums;

a plurality of tablet cassettes which are detachably mounted on the tablet cassette mounting bases of the first and second cylindrical drums, respectively;

a first plurality of guide passages, associated with the table cassette mounting bases on the first cylindrical drum, for guiding guide passage which guides inside the first and second drums tablets that have been discharged from the associated tablet cassettes to a location radially inside of the first cylindrical drum;

a second plurality of guide passages, associated with the table cassette mounting bases on the second cylindrical drum, for guiding tablets that have been discharged from the associated tablet cassettes to a location inside of the second cylindrical drum;

a main transfer robot ~~which is~~ provided in the first opening of the first cylindrical drum so as to be liftable along and rotatable about a an axial line parallel to the axis of the first cylindrical

~~drum and also rotatable about the axial line, which has,~~ the main transfer robot having a pair of arms for holding a vial, and which transfers-transferring the vial held by the arms between a delivery position located outside an opening in an upper end or a lower end of the first and seconds drums and a tablet filling position at a selected one of the guide passages where the tablets discharged through the selected guide passage are supplied to the vial~~passages of the first drum and the second drum are filled;~~

a sub-transfer robot ~~which is provided in the first opening of the first drum so as to be~~ liftable along an axial line parallel to the axis of the first drum and also rotatable about the axial line, the sub-transfer robot having ~~which has a pair of arms for holding a vial, and which-~~ transfers-transferring the vial held by the arms between a delivery position where the vial held by the arms of the sub-transfer robot~~arm~~ is delivered to the main transfer robot and a tablet filling position where the tablets discharged through the selected guide passage of the second drum are supplied to the vial~~filled;~~ and

control means for controlling a position of at least one of the first and second drums~~drum~~ and the main transfer robot so that an opening of the vial held by the main transfer robot is aligned ~~agrees~~ with an outlet of the selected guide passage.